

Translation

PATENT COOPERATION TREATY

PCT/JP2004/011307



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H3-A0301P	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2004/011307	International filing date (day/month/year) 30 July 2004 (30.07.2004)	Priority date (day/month/year) 31 July 2003 (31.07.2003)
International Patent Classification (IPC) or national classification and IPC C12N 15/09, A01H 1/00, 5/00, C12N 5/04		
Applicant HONDA MOTOR CO., LTD.		

BEST AVAILABLE COPY

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☒ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) Disc 1, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 24 January 2005 (24.01.2005)	Date of completion of this report 06 June 2005 (06.06.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/011307

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ The international application as originally filed/furnished

☐ the description:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/011307

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims

2-3, 7-11, 13-22

YES

Claims

1, 4-6, 12

NO

Inventive step (IS)

Claims

16-22

YES

Claims

1-15

NO

Industrial applicability (IA)

Claims

1-22

YES

Claims

NO

2. Citations and explanations (Rule 70.7)

Document 1

Terada, Y. et al., Cloning and nucleotide sequence of a leaf ferredoxin-nitrite reductase cDNA of rice. Biosci. Biotechnol. Biochem. (1995) Vol. 59, p. 2183-2185

Based on the description in document 1 cited in the international search report, the inventions of claims 1, 4-6, and 12 lack novelty and an inventive step.

Document 1 describes rice ferredoxin-nitrite reductase in rice comprising an amino acid sequence that differs by only 2 amino acids from the amino acid sequence identified as SEQ ID NO: 3 of this application and the gene encoding that enzyme. Document 1 also describes the splicing of this gene onto a vector and transforming host cells thereby.

The amino acid sequence of the invention of document 1 corresponds to a "protein comprising an amino acid sequence wherein one or a plurality of amino acids are replaced, deleted from, added to, and/or inserted into the amino acid sequence identified as SEQ ID NO: 3" of this application, and therefore, the inventions of claims 1, 4-6, and 12 are indistinguishable from the invention described in claim 1.

Based on the description in document 1 cited in the international search report, the inventions of claims 2, 3, 7-11, and 13-15 lack an inventive step.

After a gene encoding a protein having a specific function had been cloned, it was conventional practice in the art before the priority date of this application to use that gene to transform a suitable host (including a plant) and produce that protein, produce a partial peptide of that protein, and obtain antibodies to that protein. Therefore, persons skilled in the art can easily conceive of applying the above widely known means to the gene of the invention described in document 1. Moreover, this examination finds that no particularly outstanding effect that could not be predicted by persons skilled in the art is provided thereby.

BEST AVAILABLE COPY

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/011307

Supplemental Box Relating to Sequence Listing

Continuation of Box No. 1, item 2:

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this report was established on the basis that of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☒

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed

☒

filed together with the international application in computer readable form

☐

furnished subsequently to this Authority for the purpose of search and/or examination

☐

received by this Authority as an amendment* on _____

2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

** If item 4 in Box No. 1 applies, the listing and /or table(s) related thereto, which form part of the basis of the report, may be marked "superseded".*

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of Box V:

None of the documents cited in the international search report describes the inventions of claims 16-23, and therefore these inventions involve an inventive step.

More specifically, none of the documents describes or implies a ferredoxin-nitrite reductase in the seeds of the rice variety Kasalath comprising the amino acid sequence identified as SEQ ID NO: 3 and gene encoding that enzyme, the fact that this ferredoxin-nitrite reductase has higher activity than the ferredoxin-nitrite reductase of the rice variety Koshihikari, and the fact that it functions to enhance the redifferentiation capability of rice. This examination also finds that persons skilled in the art cannot easily conceive of using a protein having the amino acid sequence comprising SEQ ID NO: 3 of this application as an agent for plant redifferentiation and promoting plant redifferentiation using a gene encoding ferredoxin-nitrite reductase.

BEST AVAILABLE COPY